Older people: independence and mental wellbeing

Summary of evidence statements

This document lists evidence statements derived from following evidence reviews:

- Review 1 ‘What are the most effective ways to improve or protect the mental wellbeing and/or independence of older people?’
- Review 2 ‘Barriers and facilitators to interventions and services to improve or protect the mental wellbeing and/or independence of older people’
- Review 4 ‘Older People: independence and mental wellbeing – a practice case study: Wigan’
- Review 5 ‘Older people: independence and wellbeing – evidence review of cost effectiveness’

Reference	Statement title	Statement
Effects - Cluster 1: Participation in social activities and support		
ES R1 1.1	Multi-component multi-location social support interventions	There is inconsistent evidence from three studies on the effectiveness of multi-component interventions on the mental wellbeing and independence of older people: 1 RCT, 1 quasi experimental study, 1 exploratory uncontrolled before and after study (Saito 2012 +, Honigh-de Vlaming 2013 +, Bartlett 2013 -). Moderate evidence from a multi-component intervention targeted at older migrants in Japan (Saito et al. 2012 +, RCT, Japan) reported a significant positive effect on subjective well-being (p =0.039), social support (p=0.013) and loneliness (p = 0.011). One Dutch study found moderate evidence that a multi-component healthy ageing programme, including a mass media and information campaign, had a positive impact on loneliness literacy. (Honigh-de Vlaming 2013 +, quasi-experimental study, Netherlands). At 2 year follow-up, the intervention group scored more favourably than controls on loneliness literacy subscales: (relative effect size −4.4%, p<0.05) perceived social support mean scores (relative effect size −8.2% p<0.05) and subjective norm mean scores (relative effect size −11.5%, p<0.05). However there was no significant impact on loneliness or actual social support levels at two-year follow up One weak exploratory uncontrolled pilot Australian study examining different multi-faceted programmes (including fitness and arts programmes, community forums, a volunteer buddy system and culturally appropriate volunteers showed no impact on loneliness and social support (Bartlett 2013 -, UBA, Australia). Although these studies were conducted outside of the UK, multi component healthy ageing initiatives are available in the UK; the applicability of programmes would need to be assessed on a case by case basis. All of these interventions were targeted at healthy older people, although some components of programmes were targeted at people with mild

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		levels of depression.
ES R1 1.2	Participation in single location, multi-component activity programmes	There is consistent evidence from 2 weak small studies (Mehta 2004 -, Rosenbaum 2009 -) to indicate that there may be benefits to mental wellbeing associated with the participation of older people in multiple activities that are organised in fixed locations, such as cafes and older people's activity centres. One potential additional limitation was the low rate of participation of men in these programmes. Rosenbaum et al 2009 -, UBA, USA reported that 30% of customers surveyed at a not for profit café offering activities such as weight-lifting, yoga, art, computer classes and volunteering opportunities, experienced restoration (a reduction in mental fatigue and an improvement in mental wellbeing). Individuals who volunteered in the café were more likely to have high levels of restoration than those that did not achieve restoration) P<0.001). Mehta 2004, -, exploratory, Singapore looked at the psychological well-being of 12 older adults aged 60 and older who participated in many different activities at a senior centre activity programme. Life satisfaction and happiness improved in people who had attended for more than 18 months there was no improvement in people who had attended for less than 6 months (new members). (No statistical analysis reported). While both of these studies are from outside the UK these types of multi-component interventions can be seen in a UK context.
ES R1 1.3	Mentoring for older people and signposting to activities	There is inconsistent evidence on the mental well-being benefits to older people receiving mentoring support, including signposting to activities and services from trained adult volunteers in 1 uncontrolled before and after study and 1 non-randomised controlled study (Greaves 2006 -, Dickens +). There is weak evidence in the UK from (Greaves 2006 -, UBA, UK). This study reported that mentoring by trained adult volunteers led to significant improvements in reported levels

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		of social support at 12 month follow up (p=0.02) and in mental health at 6 month follow up (P <0.005), but at 12 month follow up these improvements were no longer significant. Moderate evidence from one larger scale non-randomised controlled study of the same intervention (Dickens 2011 +, NRCT, UK) at 6 month follow up reported no impact on mental wellbeing and no evidence of any difference in social support outcomes with the exception of one measure, 'getting along with others' which deteriorated in the intervention group. Both studies were conducted in the UK; it should be noted that in both evaluations the study population had poorer mental health and physical health status than the general population of older people. The interventions may also have been implemented in an inconsistent way by different community mentors which may also have impacted on outcomes.
ES R1 1.4	Educational health promotion interventions delivered by volunteers and peers	There is weak evidence from two uncontrolled before and after studies (Collins et al 2006 -, Malekafzali 2010 -, that volunteer and peer delivered educational health promotion programmes can positively benefit the mental wellbeing and social participation of older people. Collins and Benedict 2006 (-), UBA, USA evaluated the effectiveness of an educational health promotion intervention delivered to 339 people (mean age 73.20) at day centres for older people and retirement housing villages in Nevada, USA. There were significant improvements in Mastery Scale scores (t= 12.08, df = 323, p <0 .001). Loneliness also decreased (t =29.20, df = 329, p <0.001). Malekafzali et al. 2010 -, UBA, Iran assessed the effectiveness of community volunteer delivered health promotion knowledge to 101 older people (59% aged between 60-and 69 and 41% aged 70 plus) in the community through different mechanisms including home visits and face to face education events and referrals to physicians. After 9 months there

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		were significant increases in women aged 70 and older, not being worried about the future (p= 0.004), and more women aged 60-69 being happy most of the time (p=0.01).Happiness also improved for men (p=0.05) and there was a significant increase in participation in group activities and clubs among women (p=0.00). While these programmes are delivered outside of the UK, health promoting initiatives delivered by volunteers can be implemented in a UK context. The majority of participants in both studies were women, less is known about their impact on men.
ES R1 1.5	Participation in a singing programme	There is evidence from four studies on the impact on mental wellbeing of participating in choirs and other singing groups. There is strong evidence from Coulton et al 2015 (++), pilot RCT, UK that participation in a 14-week professionally led community choir group has a positive impact on mental wellbeing. 131 of 258 people over the age of 60 (mean age 69.2, 84% female, 98% white) were allocated to singing groups with the remainder in a waiting-list control group. At 6 month follow up there was a significant improvement in SF-12 mental health component scores of 2.35 $p<0.01$ for the intervention group compared to the control group. There is moderate evidence from Cohen et al 2006, 2007 (+), quasi-experimental study, USA, on the positive impact of regular participation in a professionally conducted choral group on the mental wellbeing of 90 community dwelling older people (mean age 79, 78% female, 92% White). At 12 month follow up a significant difference in morale was seen with less deterioration in the intervention group $t (125) = -1.92$; $p<0.06$. This was maintained at 2 year follow up (Cohen et al 2007 +). The comparison group also reported a more significant decrease in weekly activity than the intervention group $t (140) = -4.62$; $p<0.01$. There is weak evidence from an eight-week singing programme (Davidson 2013, -, UBA, Australia) that participation in a singing group was not associated with statistically significant improvements in positive mental health or reductions in loneliness.

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		One of these programmes evaluated (Coulton et al 2015 [++]) is delivered in the UK in more than 40 locations; other voluntary sector delivered group singing programmes are also found in the UK.
ES R1 1.6	Using a national arts festival celebrating creativity in older people	There is weak evidence from an exploratory study in the Republic of Ireland that evaluated a national arts festival attracting 100,000 people called Bealtaine, that celebrated creativity in older people each year (O'Shea et al 2012, -, exploratory and qualitative, Ireland). Nearly 90 % of participants found that participation in Bealtaine improved their quality of life, as well as encouraged their personal development in terms of enhanced learning and organisational skills. Furthermore, more than 90% of older participants reported in surveys that social contacts were increased and over 80% said that they had better engagement with the local community. Such an arts festival could be implemented in a UK context; arts and health projects for older people, including cultural events, have been delivered in the UK
ES R1 1.7	Using arts to promote and protect mental and wellbeing	There is consistent moderate evidence from 10 papers covering 9 studies (Bedding 2008 -, de Medeiros 2011 +, Eyigor 2009 +, Creech 2013/Hallam 2014 +, Haslam 2014 -, Lee 2010 ++, Seinfeld 2013 +, Sole 2010 -, Travers 2011-,) supporting a range of different art and music related interventions in promoting and protecting the mental wellbeing of older people. These studies are in addition to the evidence seen on participation in professional choirs seen in evidence statement 1.5 and participating in an arts festival in evidence statement 1. 6. There is evidence from Lee 2010 ++, RCT, Hong Kong. This explored the effects of a music listening intervention using MP3 players on the quality of life of 70 community dwelling older adults (mean age 76) reporting significant improvements in vitality, social functioning, emotional role and mental health after 4 weeks ($p<0.006$). Travers and Bartlett 2011 (-), UBA, Australia which looked at the impact of a nostalgic radio station on older

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		listeners mood (mean age 79), loneliness and quality of life. While there were no significant changes in loneliness or social isolation, there were significant improvements on the Quality of Life- Alzheimer Disease scale. Haslam and colleagues (2014) (-), RCT, Canada examined the effectiveness of novel forms of song-based reminiscence compared to story reminiscence for 40 people (mean age 85.5 to 88.5 in 3 groups). There were significant increases in life satisfaction after 6 weeks: secular singing group (p=0.005), religious song group (p=0.018) and story reminiscence groups (p=0.01). Creech 2013/Hallam 2014 +, quasi experimental study, UK explored how participation in making music might support the social, emotional and cognitive wellbeing of older people. Findings suggest those actively engaged in making music exhibit higher levels of wellbeing than those engaged in other group activities (effect sizes ranging from 0.11 to 0.19). Seinfeld 2013 +, quasi-experimental, Spain evaluated the impact of weekly piano lessons and daily training on cognitive function, mood and quality of life in 13 older adults (60+). Quality of life outcomes increased compared to controls but the study was not powered to test statistical significance. Sole et al 2010 (-), before and after controlled study, Spain, examined the impact of different types of music activities (choral singing, music appreciation classes and preventive music therapy) on quality of life of 83 healthy older adults (83% women, mean age 72.6). Non-significant improvements in new friendships, self-satisfaction, perceived usefulness and optimism were seen in all three groups. Eyigor et al (2009) (-), RCT, Turkey examined the impacts of group-based Turkish folklore dance for healthy women aged 65 and over. Over 8 weeks, there was a significant improvement in mental health in the dance group ($p<0.05$). There were no significant differences in vitality, social functioning and emotional role. de Medeiros et al. 2011 (+), RCT, US assessed the effectiveness of a structured autobiographical writing workshop on autobiographical memory, mood and self-concept in

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		older adults. 51 older adults (age range from 67–96 years) were randomly assigned to one of three groups: an autobiographical writing workshop and two control groups – a reminiscence group or a no-treatment control group. Findings indicated that self-ratings of overall well-being decreased over time across groups, but the authors did not believe that the study had a detrimental impact on participants. In a small qualitative study Bedding and Sadlo (2008),-, exploratory pilot study, UK 6 older retirees (aged 65 to 84) were interviewed about their experiences in community art classes. The participants described painting as enjoyable, rewarding, satisfying and relaxing. It brought a sense of achievement and boosted their confidence and helped them to manage negative emotions. It also helped to socialise with other people as a social club. All of these music and art interventions potentially could be delivered or adapted for delivery to a UK context.
ES R1 1.8	Support for older caregivers	There is mixed quality but consistent evidence from 7 studies: 1 RCT, 2 non randomised controlled studies 2 uncontrolled before and after studies, 1 exploratory uncontrolled pilot study, 1 uncontrolled before and after study and 1 cross-sectional survey (Boise 2005 -, Duscharme 2012 +, Duscharme 2011 -, Greenfield 2012 + , Mui 2013 -, Savundranayagam 2011 -, Won 2008 -) that psychosocial educational interventions delivered through a variety of programmes to support older people who have informal family caregiving responsibilities, largely when caring with for people with dementia, can promote or protect their mental wellbeing. In addition a feasibility study on the use of music therapy to help family caregivers with relaxation, comfort and happiness suggests this intervention merits further evaluation Hanser et al 2011 (-). Ducharme 2011, -, before and after controlled study, Canada (-) and Duscharme 2012 (+), RCT, Canada evaluated the effectiveness of a psychoeducational programme that can be delivered by lay people to help new caregivers adapt to their new role. In the 2011 study

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		following intervention caregivers had significantly improved confidence in dealing with caregiving situations (P<0.001) and better self-efficacy (P<0.001). In the 2012 study caregivers had improved confidence in their ability to care (P<005) while improvements in self efficacy tended to significance (P<0.06). Boise et al 2005 (-), UBA, USA that also evaluated an educational programme to empower family caregivers, reporting significant positive changes (in the desired direction) in emotional well-being at initial follow up and 6 months later. Savundranayagam et al 2011 (-), before and after controlled study, USA looking at the same programme found significantly lower levels of stress burden and objective burden at 6 weeks in the intervention group (unquantified). Won 2008 (-), uncontrolled before and after, US found significant improvements in caregivers psychological wellbeing (p<0.001). Hanser et al 2011 (-), uncontrolled pilot feasibility study, USA looked at a different type of intervention: the impact of a caregiver-administered music programme for family members who have dementia in an exploratory feasibility study. Caregivers rated an improvement in their own relaxation, comfort and happiness following the use of the music programme. Mui 2013 (-), uncontrolled exploratory study, US which provided support for Chinese caregivers and a survey analysis by Greenfield 2012+, US of the impacts on caregivers of participating in volunteer and education programmes also found improvements in self reported mental wellbeing (both unquantified). Although these studies were all conducted outside of the UK, the interventions could be delivered in a UK context and one of the manualised support programmes for caregivers is being trialled in a UK context.

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Effects - Cluster 2: Intergenerational activities and volunteering		
ES R1 2.1	School-based intergenerational activities	There is moderate consistent evidence on the effectiveness of school-based intergenerational social activities linking children and young people with older people in improving the mental wellbeing of older people from 3 studies, 1 RCT, 1 quasi-experimental study and 1 qualitative study (de Souza 2007 ++, Fuijiwara 2009 +, Herrmann et al 2005 +). One RCT (de Souza 2007, ++, RCT, Brazil) of 266 older people (149 group participants and 117 controls) indicates that intergenerational small group-based activities led by teachers and delivered in the school setting can lead to improved family relationships 4 months after intervention (p=0.03). One controlled before and after study (Fujiwara 2009 +, CBA, Japan) found evidence that intergenerational contact, involving older volunteers reading to children enlarged the social contacts of older people with non-related children (p<0.001). Further, there is evidence from a quasi experimental study (Herrmann 2005 +, quasi-experimental, US), involving 66 older people trained to provide life-skills training to high-school students. This study reported improved psychosocial development. All of these studies were conducted in settings outside of the UK making it difficult to assess their applicability as a whole to a UK context, but intergenerational activities involving older adults volunteering in schools can be found in a UK context.
ES R1 2.2	Intergenerational activities involving children outside of the school setting	There is weak but positive evidence on the effectiveness of intergenerational social activities involving young children interacting with older people outside of the school setting in improving the mental wellbeing of older people in 3 studies (Kamei 2011 -, Marx 2005 - and Morita 2013 -). Kamei et al. 2011 (-), quasi-experimental study, Japan evaluated the effects of the intergenerational interactions between older women (average age 75.6) and school-aged

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		children as part of an intergenerational day program (IDP) which included a range of intergenerational group activities, such as communication facilitation games and handicrafts. In terms of health-related quality of life at 3 months and 6 months post programme compared to a separate volunteer group the older adults had significantly improved mental health (F [2.26] = 4.00, p= 0.030). There is evidence from an observational study (Morita 2013 -, uncontrolled observational study, Japan) of an intergenerational program targeting preschool children and older adults that intergenerational conversation was significantly higher in the socially-oriented programme group (i.e. the participants playing games together) than in the performance-based programme group (i.e. children singing or dancing; p<0.001, no specific figures provided) Marx et al 2005 (-), quasi experimental study, USA examined the usefulness of an intergenerational email pen-pals programme and an intergenerational face-to- face visiting programme for community dwelling older adults aged 80 to 86. At post-test after 6 months, regarding social network outcomes, 26% of those in the email pen-pal programme stated that they would like to continue to contact their pen-pals, while 74% were not interested. All of these studies were conducted in settings outside of the UK making it difficult to assess their applicability as a whole to a UK context. Two of the studies were set in Japan where cultural values, including Confucianism, mean that children are taught to place value and respect on their elders, something that may not have the same resonance in the UK.
ES R1 2.3	Intergenerational activities: volunteering	There is weak but consistent evidence from 5 studies that intergenerational social activities that involve volunteering by older people can be effective; 1 quasi-experimental study, 3 exploratory studies and 1 qualitative study (Bernard 2011 -, Cook 2013 -, Mui 2013 -, Power 2007 -, Scott 2003 -). Bernard 2011, - (exploratory mixed methods, Canada) examining the effects of an

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		intergenerational telementoring program reported positive behaviour changes for older mentors in terms of their self-confidence, self-expression, enjoyment and self-efficacy. Mui 2013 – (exploratory uncontrolled pilot study, US) used a survey to explore the effect of a programme training older Chinese immigrants to provide emotional support and coping skills over the telephone – in Mandarin or Cantonese at least once per week to other older Chinese caregivers. All volunteers felt empowered and happier, while 67% felt better about themselves. Cook 2013, - (uncontrolled exploratory before and after study, UK) looked at the impact on loneliness and mental wellbeing of 30 older volunteers who were trained and supported to establish hen houses and then deliver hen-related activities to less able older people, friends/relatives, care staff/managers and school children. There was a significant increase in wellbeing at 9 month follow up ($p<0.000$) but no significant change in loneliness. There is also evidence from a quasi-experimental study used to look at how volunteering impacted on the levels of generativity in people over the age of 60 (Scott 2003 -, quasi experimental study, USA). 53 volunteers were compared with 29 non volunteering older people. Although volunteers had a relatively high mean level of generativity, the only significant differences ($p < .05$) were found to be between volunteers involved in various miscellaneous tasks (who had the highest levels of generativity), on the one hand, and those involved in the delivery of meals as well as the non-volunteer groups (who were the two lowest groups on generativity). In the USA, in a very small qualitative study Power 2007 et al (-), qualitative ethnographic study, USA looked at the impact of volunteering to provide help to adopted and fostered children and/or younger generations for 6 hours per week in return for a rent reduction. Interviews with the 2 participants indicated that intergenerational action brightened up their lives, raised their spirits, helped them to find purpose of life and increased their sense of self-worth.

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		The Cook 2013 (-) study was implemented in the UK. All of the other studies were conducted in settings outside of the UK making it difficult to assess their applicability to a UK context. It may be difficult to replicate the planned community to support adopted and fostered children in the Power study in a UK context
ES R1 2.4	Intergenerational education interventions to change attitudes of health and social care professionals and the general public	There is weak evidence from one Canadian study (Basran 2010, - uncontrolled before and after study, Canada) that an intergenerational educational intervention can help improve the attitudes of medical students towards healthy older people and tackle some of the stereotyping and myths around ageing in the short term. Attitudes scores significantly improved $p < 0.01$ following intervention, but this effect was only partially maintained one year later. There is also weak evidence from (Hernandez 2008, quasi experimental study, Spain, -) that the attitudes of university student towards older people change positively following an intergenerational learning programme. Potentially these types of intervention could be implemented in the UK.
Effects - Cluster 3: Friendship programmes		
ES R1 3.1	Building friendships	There is consistent moderate evidence from six papers reporting results from five evaluations (Lawlor 2014 ++, Martina 2006 +, Martina 2012 + Stevens 2006 +, Pope 2013 - , Butler 2006 -) that friendship programmes can enhance various aspects of older peoples' mental wellbeing and address issues of loneliness and isolation. In Ireland Lawlor et al. 2014 (++) used a RCT study to evaluate a brief peer volunteer visiting programme for community dwelling older adults. Loneliness was significantly lower in the intervention group at 3-month follow-up ($p=0.003$). One quasi experimental study in two papers (Martina 2006 +, Martina 2012 +, quasi-experimental, Netherlands) found significant increases in the number of friends for the intervention group (all women)

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		participating in a Friendship Programme compared to the control group ($\chi 2=9.569$, $p<0.005$), as well as significant improvements in subjective wellbeing. Another study which combined intervention and control group data from two earlier case controlled studies, as well as in comparison to data from a national survey, (Stevens et al., 2006 +, quasi experimental, Netherlands) using regression analyses corroborated these findings. Regression analysis also predicted that that improvement in friendship would be associated with a decrease in loneliness two years later $p<0.001$. Pope, 2013 -, UBA, US, - in a church based programme bringing together representatives of different parishes reported significant improvements in tangible social support at 1 year follow up [$F(1,88) = 11.22$, $p = 0.0012$]. Another uncontrolled study (Butler 2006, -, US) looked at a social support programme run by volunteers who were older people themselves. While social network and loneliness scores were good the study design meant it was not possible determine if this was due to the intervention. Although these studies were all conducted outside of the UK, the interventions, most notably those in Ireland and the Netherlands, potentially could be delivered in a UK context.
Effects - Cluster 4: Participation in further and continuing education beyond retirement age		
ES R1 4.1	Face to face participation in further and continuing education	There is weak evidence supporting educational programmes targeted at older adults in university settings from 5 studies: 3 quasi-experimental studies (Arkoff 2004 –, Fernandez-Ballesteros 2012 + and Fernandez-Ballesteros 2013 +) and 2 uncontrolled before and after studies (Portero 2007 + and Orte 2007-). Arkoff et al 2004, quasi experimental, USA, - looked at the effectiveness of a life review programme at a university based Academy of Life Long Learning. After a 14 weeks period there were significant improvements in wellbeing ($P<0.05$). There were no significant

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		changes in the comparison group. One quasi-experimental study (Fernadez Ballesteros et al, 2012, Spain +) for another university based programme was associated with improvements in positive (p=0.008) and negative affect (p=0.039) compared to a control group. Impacts on negative affect were replicated in when this programme was expanded to three other countries Fernandez-Ballesteros et al 2013 +, quasi experimental study, Spain, Chile, Mexico and Cuba. Portero, 2007, UBA +, Spain, found statistically significant increases in the level of subjective psychological well-being for students on a 'Third Age' university programme (p<0.000). Another study Orte 2007 -, UBA, Spain) found that participation in mainstream university classes by older people led to a significant increase in the number of new relationships (p<0.001). These studies were conducted outside of the UK, predominantly used by retired people between the ages of 55 and 70 and had a formal academic nature. In principle the interventions identified in this review could be implemented in a UK context. Third age educational activities have a long tradition in the UK, including both academically oriented learning, as well as learning primarily for enjoyment.
ES R1 4.2	Internet and multi-media delivered education programmes	There is weak but consistent evidence from 4 studies on positive benefits for mental wellbeing as a result of older people participating in educational activities through the internet and other electronic media (Fernandez Ballesteros 2004 -, Fernandez Ballesteros 2005a - Fernandez Ballesteros 2005b -, Caprara 2013 -). Fernandez-Ballesteros et al 2004 -, controlled before and after study, Spain looked at the impact of a multi-media education programme on the wellbeing of older people. Life improved significantly p=0.005. The study was later extended to compare the intervention with a traditional face to face version of the course delivered at a university (Fernandez Ballesteros 2005a, uncontrolled before and after study, Spain). The face to face version

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		tended towards an improvement in life satisfaction but this was not significant p=0.11. Caprara et al -, 2013 before and after controlled study, Chile, Cuba, Mexico and Spain and Fernandez-Ballesteros 2005b -, before and after controlled study, Spain also described two evaluations of video multi-media programme and traditional educational programme delivered in university to older people. Significantly better life satisfaction in participants receiving the multi-media course in the Caprara et al - 2013 study were seen but there was no impact in Fernandez-Ballesteros 2005 -. These studies were conducted outside of the UK and involved formal structured academic education and were used by older people with a mean age of 70. Educational activities, including the use of distance learning techniques, open to people of all ages, including video and multimedia, have a long tradition in the UK. Therefore in principle these interventions could be implemented in a UK context.
Effects - Cluster 5: Self-management activities		
ES R1 5.1	Group and self-help activities to promote self-management ability	There is moderate evidence from 2 studies (Frieswijk 2006 +, Kremers 2006 +) that group and self-help activities to promote self management ability (SMA) can have a positive impact on the mental wellbeing of older people in the short term but this is not sustained. Frieswijk et al 2006 (+), randomised study with wait list control, Netherlands found that a self administered bibliotherapy course significantly improved the ability of slight to moderately frail community dwelling older people to self-manage (P<0.05). Subjective wellbeing measured was significantly higher at the end of the 10 week course (P<0.05) compared to controls (P<0.05)but this significant difference in effect was not sustained at 6 month follow up. Kremers et al 2006 (+), RCT, Netherlands found that self-management group intervention led to significantly improved self management ability at the end of the six week course.

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		(P<0.05). At six month follow up the difference between groups was no longer significant. In regression analysis it was shown that the intervention was associated with higher wellbeing scores at the end of six weeks but with no significant differences at six months. These interventions could be delivered in a UK context.
Effects - Cluster 6: Use of computers and other information and communication technologies		
ES R1 6.1	Training courses on computing and use of the Internet	There is inconsistent evidence on the effectiveness of training courses in improving mental wellbeing and independence in older people from 13 papers covering 9 studies: 4 RCTs (Slegers 2007/2008/2012 ++) (White 2002 +) (Lagana 2013+) (Woodward 2011/13 -) , 2 quasi-experimental studies (Shapira 2007 + (Fitzpatrick 2003-) and three uncontrolled studies (Blazun 2012 -) (Campbell 2004 -) (Campbell 2005 -). In one well conducted RCT study (Slegers 2007/2008/2012, RCT, ++, Netherlands) no significant impact on wellbeing or loneliness was found suggesting that training courses may not have an impact. Another study (Lagana 2013, RCT +, US) also showed no significant difference in wellbeing in terms of self-esteem and perceived control. There is moderate evidence from 3 studies (Shapira 2007, quasi-experimental +, Israel; Blazun 2012, exploratory -; Slovenia and White 2002, RCT+, US) that computer training reduces levels of loneliness. There is also evidence from preliminary findings of an ongoing RCT (Cotten 2013, RCT, USA, -) that internet use is associated with lower levels of loneliness. There is weak evidence from one RCT conducted in the US (Woodward 2011-, US) (n=83) showing no significant changes in social networks, perceived social support and loneliness, and quality of life. An exploratory follow up study also did not find any significant changes in social networks, social support and loneliness (Woodward 2013 – US). (Fitzpatrick 2003 -, exploratory US) did not provide sufficient information to judge

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		effectiveness. (Campbell 2004 - and Campbell 2005, -, uncontrolled exploratory studies, US reported reductions in computer related anxiety and an increase in internal locus of control respectively, but they did not provide sufficient information on wellbeing. All studies are potentially applicable to the UK context. The evaluated interventions mainly targeted community-dwelling older adults and were applying standard technological equipment.
ES R1 6.2	Telephone and internet communication	There is consistent weak evidence from seven papers covering six studies on the potential positive impacts of the use of different forms of telephone and internet communication on independence and mental wellbeing (Cornejo 2013 a,b –,Bernard 2011 -, Mountain 2014 ++, Newall 2013 -, Larsson 2013 -, Jimison 2013 -). (Mountain 2014 ++, RCT, UK) in a well-designed pilot study evaluated the effects of telephone-based befriending on health-related quality of life and subjective wellbeing among older people. The evaluation showed results that favoured the intervention but differences between the groups were non-significant and the study ended prematurely due to difficulties in recruiting befrienders. (Newall 2013 -, exploratory, Canada) looking at access to support via internet or telephone communication found no statistically significant mental wellbeing but concluded it could be promising in providing the older adults at risk for social isolation with meaningful social contacts. Larsson 2013 -, uncontrolled observational study, Sweden in a very small study explored the effects of a small programme to promote social activities based on the internet. The number of social contacts increased and most participants reported improved independence when they used social internet based activities. Jimison et al 2013 - uncontrolled feasibility study, US in a very small scale uncontrolled feasibility study looked at the use of Skype and webcam plus laptops as part of an interactive but largely automated health coaching initiative to encourage socialisation and

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		communication in community dwelling older people. This indicated that the participants did regularly use Skype with new friendships developing. (Bernard 2011, -, exploratory mixed methods, Canada) examined the effects of an intergenerational telementoring programme. Positive behaviour changes in the areas of: self-confidence, self-expression, enjoyment and self-efficacy were reported. Cornejo 2013a,b -, uncontrolled before and after study, Mexico) in a very small scale study involving two older people and their immediate and extended families evaluated the impact of a situated display interface (a computer screen within a picture frame. Qualitative data indicate the older adults became engaged with the social network activities of their relatives and had new offline conversations and meetings. It would be feasible to implement all of these studies in a UK context.
ES R1 6.3	ICT interventions for carers	There is inconsistent evidence from three uncontrolled studies (Torp 2008 +, Torp 2013 -, Dow 2008 -) on the effectiveness of information and communication technologies in improving the mental wellbeing and independence of older informal carers. There is evidence from one study (Torp 2008 +, Norway) that computer classes for carers were effective in improving the social contacts and sense of support for spousal carers who had caring responsibilities with their family and friends. Another, largely qualitative study, Torp 2013 (-), observational study, Norway) reported that most older carers made use of ICT-based interventions to establish and sustain contact with informal peer support networks. Addressing the issue of social isolation in older carers living in rural areas, Dow 2008 (-), Australia) used a computer training intervention to develop basic computer skills, using email and the internet to improve the carers' mental wellbeing. Although results indicated a reduction in depressive symptoms and loneliness, no statistical evidence for the effectiveness of this intervention was provided.

Reference	Statement title	Statement
		All three of these studies are potentially applicable to the UK context. The interventions used were targeted at older informal carers in the community setting and in one study specifically focusing on the population of rural carers.
ES R1 6.4	Computer gaming	There is weak evidence from two US studies (Studenski 2010, -, Kahlbaugh 2011, -) on positive mental health outcomes for older people who make use of computer gaming devices. There is weak evidence from one unblinded and controlled study (Studenski 2010, UBA, USA -) that participation in interactive computer video dance games led to a significant improvement in positive self-reported mental wellbeing. There is weak evidence from an uncontrolled before and after study (Kahlbaugh 2011, UBA, USA -) that playing computer simulation games such as the Wii also increased positive mood. The two studies are potentially applicable to the UK contexts.
Barriers and facilitators		
ES R2.1	Use of ICT-based interventions for mental wellbeing and independence	The use of ICT was considered in 11 studies (Adams et al. 2005; Braun 2013; Cattan et al. 2011; Damodaran et al. 2013; González et al. 2012; Heart and Kalderon, 2013; Helsper 2009; Ofcom 2006; Redsell et al. 2005; Slegers et al. 2012, Warren-Peace et al. 2008). Barriers (identified in 6 studies) regarding the use of ICT, included: lack of interest in ICT, lack of experience, perceived lack of skills and ability, impersonality of technology, use of jargon, lack of time or finances and access to computers. Facilitators that may influence the level of engagement with ICT were (identified in 7 studies): having prior ICT knowledge and being given start-up help and support. Motivations for using the internet and e-mail included opportunities for communication, keeping up-to-date and accessing information. The style of teaching and the building of tutor–learner relationships also was a factor in maintaining or improving retention rates on

Reference	Statement title	Statement
		computer courses by older people. Five studies were undertaken in the UK, three in the US and one each in Australia, the Netherlands, Spain, and Israel. Given that these other studies were conducted in high income countries that are broadly comparable to the UK, the evidence on ICT intervention could be applicable to the UK.
ES R2.2	Volunteering by older people	Eight studies looked at volunteering. Four focused on experience with a high-intensity volunteering programme called the Experience Corps which operates in the United States (Martinez et al, 2006, Raley et al 2006, Tan et al, 2010 McBride et al, 2012). One additional US study looked at the racial differences in older volunteer experience and perceived benefits from volunteering (Tang et al. 2012). One UK based study –Ageing Well - looked in detail at the reasons why older people volunteer (Lambert et al 2007) and two other studies, one in Ireland and one in the UK, looked at volunteer peer befrienders for older people (Lawlor et al 2014, Lester et al 2012). The following factors that influenced initial engagement and sustained volunteering by older people were reported in 5 studies: using multiple channels to recruit volunteers; proving materials and training in minority languages, the role of different motivations such as social engagement, and volunteering recognition; flexibility of volunteering programmes and effective supervision. Barriers to volunteering identified in the UK Ageing Well study were: health problems or disabilities, a lack of transport, a lack of time or unsuitable hours for training, and the need to make out of pocket contributions. Five studies identified perceived benefits from volunteering for: physical and psychological wellbeing, sense of empowerment, knowledge and social networks. Two studies were set in the UK and another in Ireland. The remaining studies were all

Reference	Statement title	Statement
		conducted in the USA but issues in engaging older people as volunteers, including those from BME backgrounds, are likely to be applicable to the UK.
ES R2.3	Participation in arts-based interventions	Eight studies using surveys, interviews, and feedback forms explored participation in arts-based interventions (Cohen-Mansfield 2005, Court-Jackson, 2011, Goulding 2013, Hallam et al 2012 , O'Shea and Ni Leime, 2011, Skingley 2010, Teater and Baldwin, 2014 and Varvarigou et al. 2011).= Barriers identified in 3 UK based studies to participation included lack of awareness of and interest in the arts, a perception that art, and some venues where events held, are elitist, challenges in understanding art, physical/technological obstacles to use of music player devices and difficulties in engaging BME populations. Practical barriers included out of pocket costs, transportation and attending events in the evening. The eight studies highlighted social interaction and perceived health benefits as facilitators to participation. The use of well-trained enthusiastic museum/gallery educators and peer volunteers to interact with when visiting arts venues could also help make the experience more meaningful for older people not familiar with art. Six studies were conducted in the UK, one in Ireland and one in the USA. All could, with consideration of specific setting, be applicable to the UK.
ES R2.4	Social representation of/ perceptions and attitudes towards older people	Four studies looked social perceptions and attitudes towards older people (Hoban et al 2011, Hoban et al 2013, Martin et al 2009, Van Weelden 2004). In one study analysing media content, negative perceptions of older people focus on the concept of being a burden to society, while positive attitudes focused on the contribution of older people and ageing as a celebration of longevity. Another study reported that negative attitudes towards older people were reported by older people themselves to be an

Reference	Statement title	Statement
		important barrier to their use of services. Facilitators to addressing negative attitudes were identified in 2 studies: being treated with fairness and respect, meaningful interactions with service providers, including genuinely being listening to. Interaction with older people as part of music therapist training could facilitate students becoming more positive about working with older people. Three studies are from the UK and one from the US. All of the themes are relevant to a UK context.
ES R2.5	Educational programmes	Three papers looked at barriers and facilitators to participation in education programmes for older people (Sloan-Seale, 2010, Villar et al, 2010, Villar and Celdran, 2014). Barriers included negative personal traits and attitudes, a lack of interest or time, too much focus on vocational activities, and financial constraints. Facilitators included having genuine interest in topics, perceived health benefits and improved social interactions. Women may be more likely than men to participate in educational programmes. Although 2 studies were from Spain and one from Canada similar educational programmes are delivered in the UK, so the findings could be applicable to the UK context.
ES R2.6	Social connectedness	Eight papers discussed some of the barriers and facilitators for older people to establishing or maintaining social connections of different types (Andrews et al 2003, Dwyer 2011, Hoban 2011, Hoban 2013, Lawlor et al 2014, Lester et al 2012, Scharf et al 2005, Van Groenou et al 2010). Facilitators identified to improve participation and social connectedness in 5 papers included: volunteer peer befrienders and community signposting services, better training for volunteers and paid staff to help improve communication, person centeredness and equality; more involvement of older people in decision making processes; and language

Reference	Statement title	Statement
		and culturally appropriate support and outreach services for BME groups. Barriers identified in the 8 studies to participation and improved social connectedness included negative personal traits and attitudes, a lack of interest in the programmes, declining physical health, caregiving responsibilities, poor education, low incomes and poor access to transportation. 3 studies also highlighted barriers due to gender, ethnicity and sexual orientation that need to be taken account of when designing services.
Review of practice – Wigan case study		
Summary statement R4.1	UK practice case study	Multiple activities are provided by individual services, including social, multicomponent, support (mentoring, signposting), friendship building and education. Older people were involved as volunteers in many activities. Many were coordinated through three key organisations
Review of full economic evaluations		
Summary statements R5.1	Evidence from published full economic evaluations	*[The] evidence base with respect to cost-effectiveness of interventions to improve and promote mental wellbeing of older people is very limited.* *Estimates of cost effectiveness included cost saving, cost per QALY of €4123 and €6827 and suggestion of 'cost effective' QALY gains at £18.88 per participant.* *There is considerable heterogeneity in types of intervention examined and methodical limitations in published literature. As a consequence, estimates of cost effectiveness and applicability are uncertain.* Three studies provided evidence on the cost effectiveness of interventions to promote the

Reference	Statement title	Statement
		mental wellbeing of older people. Onrust et al. (2008; RCT +) reported that a one-to-one visiting service for older widowed individuals is cost effective in the Netherlands with an incremental cost per QALY of €6827 (with bootstrapping €4123; 95% CI: - €627,530 to €668,056 per QALY). It reported a 70% chance of the intervention being more acceptable than usual care at a willingness-to-pay threshold of €20,000 per QALY gained. However, there is considerable uncertainty surrounding this estimate. Pitkala et al. (2009; RCT -) reported that a psychosocial group rehabilitation for lonely older people was cost saving (by €62 per person at 1 year) compared with usual community care in Finland while also improving subjective health at 1 year (p=0.07) and improving survival at 2 years (97% (95% CI: 91 to 99) versus 90% (95% CI: 85 to 95); p = 0.042). However, this was conducted as part of a limited cost consequence analysis and there are considerable limitations. The applicability of both of these studies (conducted within other European countries) to a UK population is uncertain. Coulton et al. (In preparation; RCT +) provided moderate evidence of the cost effectiveness of a community singing intervention for older people aged 60 years and above with a QALY gain of 0.015 (95% CI: 0.014 to 0.016; p <0.01) at 6 months, a net cost per participant (over 14 sessions) of £18.88 as well as improved mental health-related quality of life (SF-12 mean difference 2.35 (95% CI 0.06 to 4.76; p=0.05)). It reported a 64% chance of the intervention being cost effective at a willingness-to-pay threshold of £30000 per QALY gained. This study is arguably more applicable than the others, having been conducted in East Kent within a UK setting and investigating a community singing intervention currently being delivered by the third sector on the health-related quality of life of older people.